

Appl. No. 10/706,392
Amdt. dated May 18, 2005
Reply to Office action of February 18, 2005

REMARKS/ARGUMENTS

Claims 1-5 are presently pending in the application.

In this amendment, Claims 1-3 have been amended.

Claims 6-8 have been added.

Claims 4-5 stand withdrawn and remain unchanged.

In accordance with the new rules, all the claims are shown above, and the amended claims are shown in a redlined format. The amendment to the specification is made by supplying a substitute specification which shows the changes made from the originally filed specification. As set forth below, the amendments to the Claims are believed to place the Claims in condition for allowance. In view of the amendments, as discussed below, reconsideration of the Application and issuance of a Notice of Allowability are respectfully requested.

Drawing Objections

The Examiner has objected to the drawings, asserting that inlaid portion is not shown. This inlaid portion (which is termed "inlay area" in the substitute specification) is shown by reference no. 14 in FIG. 2a. The reference to "not shown in the drawing" referred to the drawing of FIG. 1, which, in fact, does not show the inlay area. However, as just noted, this inlay area is shown in FIG. 2 (and is labeled in FIG. 2a). Hence, Applicant respectfully requests that this objection to the drawings be removed.

Page 6 of 14

16 May 2005

N:\Patents\MAKU 08814\MAKU 8814 - Amendment A.doc

Appl. No. 10/706,392
Amdt. dated May 18, 2005
Reply to Office action of February 18, 2005

The Examiner objected to the drawings in view of the fact that a ring was shown in FIG. 1, but Claim 3 sets for a list of jewelry types with which the invention can be used. FIGS. 2(a)-(d) are cross-sections showing the steps involved in making the jewelry of the present invention. The cross-sections of FIGS. 2(a)-(d) are not specific as to the type of jewelry shown therein. Thus, the description of FIG. 2 has been amended at page 7 (of the marked up substitute specification) to provide that:

Fig. 2 shows a method of manufacturing jewelry relating of the present invention. Figs. 2 (a) and 2 (b) are sectional views showing the inlaying of a decorating part 12 into an inlay area 14 of the main body 11 of the jewelry. This main body 11 can be the main body of a ring, pendant, necklace, earring, cuff button, brooch, tie tack, bangle, buckle, choker, bracelets, watch band or glasses.

In view of the fact that the application as originally filed anticipated that the method can be used to produce jewelry in the forms set forth in original Claim 3, the amendment to the specification to provide that FIG. 2 shows a main body of "a ring, pendant, necklace, earring, cuff button, brooch, tie tack, bangle, buckle, choker, bracelets, watch band or glasses" does not add new matter to the application. In view of the fact that the specification as amended provides that FIG. 2 shows a cross-section of the main body of any of the types of jewelry contemplated under Claim 3, and in view of the fact that the structural detail of the various types of jewelry is not required for an understanding of the claimed invention, Applicant respectfully asserts that new drawings adequately show the invention and that new drawings are not required. (MPEP 608.02 (d)) Applicant therefore
Page 7 of 14

18 May 2005

N:\Patents\IMAKU 08814\IMAKU 8814 - Amendment A.doc

Appl. No. 10/706,392
Amdt. dated May 18, 2005
Reply to Office action of February 18, 2005

also requests that this objection be withdrawn.

Objection To The Specification

The Examiner objected to the specification as originally filed. The specification has been amended and a substitute specification is filed herewith. Applicant respectfully requests that the originally filed specification be replaced in its entirety with the marked up (or red-lined) version of the substitute specification filed herewith. Applicant has also provided a clean copy of the substitute specification. In view of the substitute specification filed herewith, Applicant respectfully requests that the objection to the specification be withdrawn.

The Abstract has been amended to comply with the Examiner's requests. Withdrawal of this objection is also requested.

Rejection Under 35 U.S.C. §102

The Examiner has rejected Claims 1-3 under 35 U.S.C. §102(b) as being anticipated by West (Pat. No. 6062045). As set forth at Col. 8, lines 17-24, West was solving the problem of providing highly wear resistant jewelry. As set forth thereat:

"The principal concept of this invention is the provision of an ultra durable hard metal or high tech ceramic type of jewelry that may or may not incorporate precious metals and/or precious gem stones. The invention also provides a unique jewelry manufacturing process that combines hard metals with precious metals in a manner such that the precious metals are flush or recessed slightly below the outer most surfaces of the hard metals over the outer wear surfaces to achieve maximum abrasion and corrosion resistance."

Page 8 of 14

18 May 2005

N:\Patents\MAKU 08814\MAKU 8814 - Amendment A.doc

Appl. No. 10/706,392
Amdt. dated May 18, 2005
Reply to Office action of February 18, 2005

To this end, West, in FIG. 5 shows a band of precious metal being received in a groove in ring.

Applicant, on the other hand, is solving a substantially different problem which is not solved by West – namely, (1) the securing of a copper alloy decoration in an inlay area of the ring (or other item of jewelry) to prevent the decoration from protruding from the jewelry and (2) providing a copper alloy that, once tarnished from oxidation, can be polished to recover the original color of the decoration.

To anticipate Applicant's claimed invention, "the identical invention must be shown in as complete detail as is contained in the ... claim". MPEP §2131, *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989). Hence, West must show each and every feature set forth in the rejected claim. However, West does not teach the copper alloy set forth in Claim 1. The Examiner asserts that West's recitation that "other forms of material can be inlaid in the groove" provides support for the anticipatory rejection of Claim 1. What the Examiner has done, in effect, is reject a species with a genus. However, as set forth in MPEP 2131.02, this is not proper. MPEP 2131.02 states that "a genus does not always anticipate a claim to a species within the genus." MPEP 2131.02 goes on to state that:

"When the compound is not specifically named [in the reference], but instead it is necessary to select portions of teachings within a reference and combine them, e.g., select various substituents from a list of alternatives

Page 9 of 14

18 May 2005

N:\Patents\WAKU 08814\WAKU 8814 - Amendment A.doc

Appl. No. 10/706,392
Amdt. dated May 18, 2005
Reply to Office action of February 18, 2005

given for placement at specific sites on a generic chemical formula to arrive at a specific composition, anticipation can only be found if the classes of substituents are sufficiently limited or well delineated. Ex parte A, 17 USPQ2d 1716 (Bd. Pat. App. & Inter. 1990). If one of ordinary skill in the art is able to "at once envisage" the specific compound within the generic chemical formula, the compound is anticipated. One of ordinary skill in the art must be able to draw the structural formula or write the name of each of the compounds included in the generic formula before any of the compounds can be "at once envisaged." One may look to the preferred embodiments to determine which compounds can be anticipated. *In re Petering*, 301 F.2d 676, 133 USPQ 275 (CCPA 1962)" (emphasis added)

However, West's mere recitation that "other forms of material" can be used does not contain a description which would sufficiently limit or delineate the copper alloy as set forth in Claim 1. Hence, the copper alloy set forth in Claim 1 cannot "be at once envisaged" by one of ordinary skill in the art based on the teachings of West. Hence, Applicant respectfully points out that West does not anticipate Claim 1 or the claims which depend therefrom.

Additionally, Claim 1 has been amended to provide that the decorative part is secured in the inlay area by a "layer of solder between said decorative part and said main body." West does not teach or suggest that a layer of solder be used to secure a decorative part in an inlay area. In fact, as noted above, West does not teach any specific method for securing a decorative part in an inlay area. Hence, for this additional reason, West does not anticipate Claim 1.

Appl. No. 10/706,392
Amdt. dated May 18, 2005
Reply to Office action of February 18, 2005

As noted above, Applicant, in developing his present invention, was solving the problems (1) of securely inlaying a decorative part in an item of jewelry, especially a jewelry item having a curved surface, so that the decorative item will not become dislodged from the main body of the jewelry item; and (2) providing a copper alloy which can be polished after it has oxidized to restore its initial copper color. West, on the other hand, was concerned with producing a ring of hard material to protect the ring from wear and damage. Although West and Applicant are both concerned with making jewelry, West's disclosure is sufficiently far removed from Applicant's area of endeavor as to be non-analogous. It is noted that West contains almost no description regarding how a decorative item can be secured into an inlay area. The only description is provided at Col. 5, lines 60-67 where West states:

"Following the sintering operation, the ring stock can be ground and finish polished, and when appropriate, have a selected precious metal and/or other material installed in the groove 22 as suggested by the laying in of the soft metal strip 50 depicted in FIG. 5 of the drawings. Once the metal strip 50 is suitably installed using methods well known to jewelers, the assembly can be finish polished and made ready for market."

West has no teaching or suggestion beyond using "methods well known to jewelers" as to how to insert the decorative part into the inlay area securely. One skilled in the art in developing jewelry in which a decorating part is secured in an inlay area would not be drawn to a reference such as West in solving the problem. Hence, West is non-analogous art. Withdrawal of West as a reference is thus respectfully requested.

Page 11 of 14

16 May 2005

N:\Patents\WAKU 08814\WAKU 8814 - Amendment A.doc

Appl. No. 10/706,392
Amdt. dated May 18, 2005
Reply to Office action of February 18, 2005

Even if the Examiner should choose to retain West as a reference, West still does not teach or suggest the claimed invention. It is noted that West does not teach or suggest the copper alloy set forth in Claim 1. Further, West does not teach or suggest the use of a solder layer between the decorating part and the main body inlay area to secure the decorating part in place in the main body. For at least these reasons, Claim 1 is neither anticipated nor made obvious by West.

Claim 2 depends from Claim 1 and, as amended, provides that the item of "jewelry has a curved surface at said inlay area." Claim 2, as currently written is not a product by process claim, but rather claims the configuration of the jewelry –namely that the main body is curved where the inlay area is located. Claim 2 is neither anticipated nor made obvious by West for the same reasons noted above in conjunction with Claim 1.

Claim 3 also depends from Claim 1 and provides that the item of jewelry is selected from the group of "rings, pendants, necklaces, earrings, cuff buttons, brooches, tie tacks, bangles, buckles, chokers, bracelets, watch band and glasses." Claim 3 is neither anticipated nor made obvious by West for the same reasons noted above in conjunction with Claim 1.

New Claim 6 has been added. New Claim 6 depends from Claim 1 and provides that the main body of the jewelry is made from a metal "chosen from the group consisting of a gold alloy, a silver alloy, a platinum alloy, and combinations thereof." This is set forth

Page 12 of 14

16 May 2005
N:\Patents\WAKU 08814\WAKU 8814 - Amendment A.doc

Appl. No. 10/706,392
Amdt. dated May 18, 2005
Reply to Office action of February 18, 2005

at pages 2 and 4 of the application as originally filed. Hence, this amendment does not add new matter. Claim 6 is believed to be allowable over West for the reasons set forth above in conjunction with Claim 1. Additionally, gold, silver and platinum alloys are known to be relatively soft metals. West, on the other hand, is directed to jewelry in which the body of the jewelry item is made from a hard compound so as to resist wear of daily use. West specifically teaches away from the use of such soft metals to form the main body of the item of jewelry. Hence, new Claim 6 is not anticipated or made obvious by West for this additional reason, and Claim 6 is believed to be allowable independently of the allowability of Claim 1.

New Claim 7 also depends from Claim 1 and is believed to be allowable for the reasons set forth above in conjunction with Claim 1. Claim 7 is a product-by-process claim directed to the manner in which the layer of solder is formed between the decorating part and the main body inlay area. None of the references of record are believed to teach or suggest the process set forth in Claim 7. Hence, Claim 7 is believed to be in condition for allowance independently of the allowability of Claim 1.

New Claim 8 is a new independent claim directed to an item of jewelry of the present invention. As set forth therein, the item of jewelry comprises a main body having an inlay area and a decorating part received in the inlay area and which is made of a copper/gold alloy having the noted weight percentages of copper and gold. The item of

Page 13 of 14

18 May 2005

N:\Patents\MAKU 08914\MAKU 8814 - Amendment A.doc

Appl. No. 10/706,392
Amdt. dated May 18, 2005
Reply to Office action of February 18, 2005

jewelry also includes a layer of flux positioned between the decorating item and the main body inlay area and a layer of solder which replaces the layer of flux under the influence of heat; and it is the solder which secures the decorating part in the main body inlay area.

None of the references, whether considered individually or in combination teach or suggest the item of jewelry as set forth in Claim 8. Hence Claim 8 is believed to be allowable over the art of record.

In view of the foregoing, Claims 1-3 and 6-8 are believed to be in condition for allowance. A Notice of Allowability with respect to these claims is thus respectfully requested.

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Respectfully Submitted,


Jonathan P. Soifer, Reg. No. 34,932
Polster, Lieder, Woodruff & Lucchesi, L.C.
12412 Powerscourt Drive, Suite 200
St. Louis, Missouri 63131
Tel: (314) 238-2400
Fax: (314) 238-2401
e-mail: Jsoifer@patpro.com

Page 14 of 14

16 May 2005

N:\Patent\MAKU 08814\MAKU 8814 - Amendment A.doc

App. No.: 10/706,392
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MARKED UP SUBSTITUTE SPECIFICATION

COPPER COLORED JEWELRY AND METHOD OF MANUFACTURING COPPER COLORED JEWELRY

Background of the Invention

The present invention relates to jewelry, in particular, jewelry made of a copper
ally, and to a method of manufacturing such jewelry, which is more particularly to
jewelry made of copper alloy.

Conventionally, copper alloy containing 0.5 through 5 weight percentage of gold,
 (so called, "Shakudo") is a traditional one of Japanese traditional metals used for
 manufacturing "Katana no Tsuba" (i.e., which is Japanese sword guards) and
 "Kanzashi" (i.e., which is Japanese style hairpins), and it It has a beautiful light pink
color in original.

However, as conventional "Shakudo" contains ~~copper at a rate of 95 weight~~
~~percentage or more~~ copper and, thus it is easily oxidized and discolored after daily use.
Thus, so It is rarely used as material for in manufacturing modern jewelry such as rings
and pendants. Additionally Besides, after conventional "Shakudo" alloy is oxidized, it
turns and turned in black or dark purple. The, beauty of "Shakudo" alloy is all lost and
its is hardly recovered in original color cannot be recovered due to the degree of
oxidation because it is oxidized up to the inside totally.

Moreover, "Shakudo" alloy is has a nature of softness and sticky stickiness
 compared to other Jewelry metals used for making jewelry, such as K14K or, K18K gold
or platinum, and therefore Therefore, because of the solidness required for jewelry to be
used daily, "Shakudo" alloy it is also rarely used as a material to form shape of jewelry
solely because solidness is required for jewelry of daily use. Consequently, when

App. No.: 10/706,392
 Filed: 12 November 2003
 Applicant: Kuniya Maruyama

MARKED UP SUBSTITUTE SPECIFICATION

"Shakudo" alloy is used for modern jewelry manufacturing, it is common to be mixed with a gold alloy material 21 such as in a ring 20 shown in Fig. 3. It was often called "Mokume jewelry" by embodying a pattern of wood grain 22 in the tarnished portion of "Shakudo".

Furthermore, "Shakudo" sometimes is used as a decoration in part of a flat shaped jewelry such as brooches. However, this but it also produces another problems. Because of the difference in the nature difference of materials, a so-called inlaying technique must be applied for manufacturing such a jewelry. For example, a decorating part of "Shakudo" decorating part is inserted into a concave inlay area inlaid portion formed in a main body made of other materials such as a gold alloy by pressing using a jewelry tool such as a hammer and then polished very hard together. It is not only difficult to inlay "Shakudo" securely in the other material unless shape of jewelry is very flat, but also the inlaid portion protrudes after in long term use because of nature differences in the of both metals.

Summary of the Invention

~~The inventor of the present invention invented~~ I have determined that it is possible to keep "Shakudo" in a color of original beautiful light pink color if the copper alloy contains strikingly less copper than the conventional "Shakudo", when it is polished after it is oxidized and discolored dark. It also provides unique jewelry by changing color form pink to dark brown under after the oxidation is complete proceeded.

It is also provides a method of manufacturing new type of "Shakudo" jewelry, which can be used to produce curved jewelry, such as rings, pendants, earrings, etc., in

App. No.: 10/706,392
Filed: 12 November 2003
Applicant: Kuniya Maruyama

MARKED UP SUBSTITUTE SPECIFICATION

addition to not only flat shape jewelry such as brooches but also curved-shaped jewelry such as rings, pendants, earrings etc.

That is, ~~the object of the present invention is to use~~ copper alloy of the present invention which contains 6 to 15 weight percentage of copper and 94 to 85 weight percentage of gold. The copper alloy, which is a light pink color in original and a fancy chocolate color after it has oxidized. The, a light pink color can be is recovered by a cleaning process including washing and polishing surface.

Further, in accordance with another ~~object aspect~~ of the present invention is to apply a flux is applied to the body of the jewelry before a decorating portion made of ~~above-mentioned~~ the copper alloy is inserted into an inlaying part area formed in the main body of the jewelry, the main body being made of the other materials such as gold, silver, or platinum. Therefore, the decorating portion made of ~~above-mentioned~~ the copper alloy can be inlaid securely in the inlaying part area formed in main body of jewelry, even though main body of jewelry is formed in curved shape.

Therefore, jewelry of the present invention is ~~consisted~~ made of a main body with an inlay area ~~inlaid portion~~ and an decorating part made of the copper alloy which is inserted into the foresaid inlaid portion; and the copper alloy ~~which contains~~ containing 6 to 15 weight percentage of copper and 94 to 85 weight percentage of gold.

With the composition of the copper alloy of the present invention, jewelry made with the copper alloy has an original beautiful light pink copper color ~~which is original of copper color.~~ The then jewelry then is oxidized oxidizes very slowly, and in only at its surface, and very slowly to a dark color. This changing color from pink to chocolate, which provides enjoyment of ~~changing color of jewelry from pink to chocolate.~~

App. No.: 10/706,392
 Filed: 12 November 2003
 Applicant: Kunlya Maruyama

MARKED UP SUBSTITUTE SPECIFICATION

Further, jewelry of the present invention is ~~selected a type of foresaid jewelry~~
~~from a group of including~~ includes items such as rings, pendants, necklaces, earrings,
 cuff buttons, brooches, tie tacks, bangles, buckles, chokers, bracelets, watch bands and
 glasses which have, at least in part, a ~~are formed in curved surface shape in some part~~
 of jewelry.

With ~~type of~~ jewelry of the present invention, any form of jewelry can be provided
 using copper alloy which is changeable color from an original light pink ~~of original~~
 copper color to the dark brown color of fancy chocolate as a unique decoration.

Furthermore, ~~A a~~ method of manufacturing jewelry ~~of the present invention is~~
~~composed of~~ includes forming a main body of jewelry having an inlay area ~~inlaid portion~~,
 forming a decorating part made of ~~foresaid the~~ copper alloy which is ~~adjusted~~ inserted
 into the inlay area ~~foresaid inlaid portion~~, a flux is applied at the joint surface of inlay
area ~~foresaid inlaid portion~~ and/ or a surface of decorating part, inserting a decorating
 part into the inlay area ~~foresaid inlaid portion~~ of main body by pressing. ~~The,~~ a main
 body of jewelry is then heated and soldering is applied.

With the method, flux which is applied between joint surface of inlay area ~~inlaid~~
~~portion~~ and decorating part evaporates ~~is evaporated~~ spontaneously from the heating
 generated when soldering after decorating part is inserted. Therefore, the evaporated
 flux forms a slight gap (space) between inlay area ~~inlaid portion~~ and decorating part, the
 solder flows naturally into the gap (space), so that decorating part made of the copper
 alloy is attached securely to the main body. ~~securely and which~~ This makes it also made
 a possible to form copper alloy jewelry having curved shape.

App. No.: 10/706,392
 Filed: 12 November 2003
 Applicant: Kuniya Maruyama

MARKED UP SUBSTITUTE SPECIFICATION

Still further, the surface of the jewelry made in accordance with the above method can be cleaned ~~of the present invention is characterized that cleaning process is applied to the surface of foresaid decorating part of copper alloy after the color is has changed to dark brown due to by oxidization in a certain time of use, and finishing process includes by washing and polishing at least.~~

With the process, chocolate color of oxidized copper alloy is recovered easily to light pink original copper color and users of present invention the jewelry can enjoys the change of color of copper.

Brief Description of the Drawings

Fig. 1 is a drawing showing an item of jewelry ~~relating to the preferred embodiment~~ of the present invention,

Fig. 2 (a) through (d) are drawings illustrating the method of manufacturing jewelry ~~relating to the preferred embodiment~~ of the present invention, and

Fig. 3 is a drawing showing conventional jewelry using "Shakudo".

Detailed Description of the Preferred Embodiments

Referring now to the drawings, preferred embodiments of the present invention are described more particularly. Incidentally, in the description, a ring represents A an item of jewelry of the preferred embodiment of the present invention.

Fig. 1 is a drawing showing jewelry relating to the preferred embodiment of the present invention. The jewelry ~~Jewelry~~ 1 has a main body 11 formed as a flat ring shape. Main body 11 has an inlay area 14 ~~inlaid portion (not shown in the drawing)~~ which is capable of receiving a decorating part. As shown in Fig. 1, two decorating parts 12 are already installed in the inlay area ~~inlaid portion~~.

App. No.: 10/706,392
 Filed: 12 November 2003
 Applicant: Kuniya Maruyama

MARKED UP SUBSTITUTE SPECIFICATION

Main body 11 can be made of any materials ~~which are commonly used~~ in manufacturing jewelry, such as K12K, K14K, or K18K gold alloy, silver and/or platinum alloy. Additionally, ~~the main~~ Main body 11 has a concave inlay area ~~inlaid portion (not shown in the drawing)~~ sized adjust to the decorating parts 12. Main body 11 is formed by a common manufacturing method of manufacturing jewelry such as lost wax casting, press cutting, and hand making.

The decorating part 12 is installed in the inlay area ~~inlaid portion~~ of main body 11 by inlaying technique (so-called "Zogangihou"), ~~that~~ The decorating part 12 is composed of a copper alloy containing ~~contains~~ 6 to 15 weight percentage of copper and 94 to 85 weight percentage of gold. The decorating part 12 has a light pink color initially and the copper alloy is only oxidized on it's surface and the oxidation occurs very slowly. This is due to the fact that, ~~because~~ the copper alloy contains much more gold (and hence, less copper) than the conventional "Shakudo".

Therefore, the decorating part 12 can recover the original light pink color by cleaning ~~when~~ after the surface is turned to dark brown. Conventional metal forming methods can be applied to form the decorating part 12, ~~for~~ For example, an ingot of the copper alloy is adjusted to a preferable thickness by roller and the plate of copper alloy is formed to a preferable shape by press cutting or by hand.

The main body 11 also has decorating surface 13 which adds another decoration ~~of~~ to the jewelry 1. The decorating surface 13 is not essential for jewelry 1 and it's can ~~be~~ formed in many conventional jewelry manufacturing technique, such as engraving, enameling, matte finishing or many small diamonds setting.

App. No.: 10/706,392
 Filed: 12 November 2003
 Applicant: Kuniya Maruyama

MARKED UP SUBSTITUTE SPECIFICATION

Fig. 2 shows a method of manufacturing a jewelry relating of the present invention. Figs. 2 (a) and 2 (b) are sectional views showing in the event of inlaying of a decorating part 12 into an inlay area 14 of the to main body 11 of the jewelry. This main body 11 can be the main body of a ring, pendant, necklace, earring, cuff button, brooch, tie tack, bangle, buckle, choker, bracelets, watch band or glasses. Fig. 2 (c) is a top view of Fig. 2 (b) from a direction of C for showing a method step of placing solder on the border between decorating part 12 and main body 11 on the surface of main body 11. And Fig. 2 (d) shows ~~the condition that~~ the solder having flowed inward and reached into the joint surface of decorating part 12 and main body 11.

For the first step of the method of manufacturing a jewelry, a few inlay areas of ~~inlaid portions~~ of concave shape are formed in main body 11 by the foresaid manufacturing method which are adjusted to the shape of decorating part 12. Also, a few of decorating parts 12 are obtained by the foresaid manufacturing method, ~~which~~ The decorating parts are composed of the copper alloy which contains 6 to 15 weight percentage of copper and 94 to 85 weight percentage of gold.

For the next step, each of decorating parts 12 is are inserted into an inlay area ~~each of inlaid portions~~ 14 formed in main body 11 as shown in Fig. 2 (a).

In this step, a flux 15 are is pre-applied to joint surfaces of the inlay area ~~inlaid portion~~ 14 and/or the decorating part 12. Flux 15 are is preferably a liquid type flux but is not limited to any special type of flux.

~~For~~ To inserting the decorating part 12 into the inlay area ~~inlaid portion~~ 14, jewelry making tools such as hammers are used. Using the jewelry making tools, the decorating part 12 are is pushed very hard to in the direction of an arrow B.

App. No.: 10/706,392
 Filed: 12 November 2003
 Applicant: Kuniya Maruyama

MARKED UP SUBSTITUTE SPECIFICATION

Consequently, flux 15 which was applied on the joint surface ~~are~~ is sandwiched between the decorating part 12 and the inlay area ~~inlaid portion~~ 14.

For the third step, each joint surfaces between the decorating part 12 and the main body 11 are soldered. As shown in Fig. 2 (c), solders 16 are placed in parallel on the surface of the border of the main body 11 and the decorating part 12, ~~then a~~ Then the main body 11 is heated using a jewelry making tool such as a burner. Solder 16 ~~has~~ is not limited to any special type of solder.

When the main body 11 ~~are~~ is heated, such as by a burner, the flux 15 applied to the joint surfaces evaporates ~~are evaporated~~. Consequently, a slight gap emerges ~~are emerged~~ at the ~~foresaid~~ joint surfaces between the decorating part 12 and the main body 11 and melted solder 16 spontaneously flows into the gap ~~spontaneously~~ with the help of so called the interfacial effect of the flux. Therefore, even though the decorating part 12 and the main body 11 are formed to the ~~curbed~~ curved shape, the decorating parts 12 are securely installed in the main body 11 and ~~are prevented from protrusion~~ will not protrude from the main body 11, even after daily use for a long time ~~daily use~~.

For As a further step of the present invention, ~~that is the method of recovering~~ the original light pink color of the decoration can be recovered after it has oxidized. A ~~Cleaning~~ cleaning treatment can be applied to the jewelry 1 ~~of this invention and after~~ the decorating part 12 has oxidized and turned dark brown ~~by oxidation is to~~ recovered its original light pink color ~~by this process~~.

The cleaning method of jewelry 1 includes ~~is consisted~~, for example of, acid washing, ion washing, rubber polishing, knife polishing, charcoal rubbing, buffing etc.,

App. No.: 10/706,392
Filed: 12 November 2003
Applicant: Kuniya Maruyama

MARKED UP SUBSTITUTE SPECIFICATION

~~the~~ The cleaning method can be applied repeatedly for darken decorating part 12 after long time daily use.

By applying foresaid polishing processes, the ~~decorating part 12 is recovered~~ its original light pink color of the copper alloy is recovered, because only the surface is oxidized in jewelry 1, ~~and the~~ The cleaning process can be applied repeatedly after the surfaces of the decorating part 12 turns dark brown.

The present invention is not limited to the above-mentioned embodiments. For example, only a flat type of ring is described above but any type and any form of jewelry such as tiffany type of ring, pendants, necklaces, earrings, cuff buttons, brooches, tie tacks, bangles, buckles, chokers, bracelets, watch band, glasses and the like can be formed using the method of the presented by this invention naturally.

Further, materials of the main body of jewelry is not limited to aforesaid embodiments. For example, not only gold alloy is used for main body of jewelry, but any type of material is used as long as it can withstand ~~bears for~~ soldering.